REMARKS/ARGUMENTS

Claims 33, 35-50, 52-59, and 61-81 are pending in this application, with claims 33 and 44 being the only independent claims. Claims 33, 39-46, 48-50, 57-59, and 79-81 are currently amended. Claims 1-32, 34, 51, and 60 were previously canceled. Reconsideration of the above-identified application, as herein amended and in view of the following remarks, is respectfully requested.

Claims 33, 35, 36, 38, 40, 44-50, 52-59, 61-65, 80 and 81 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,656,081 (Isen).

Claims 33, 35, 36, 38, 40, 44-50, 52-59, 61-65, 80 and 81 are rejected under 35 U.S.C. §103(a) as being unpatentable over previously cited U.S. Patent No. 6,147,662 (Grabau) in view of U.S. Patent No. 6,712,931 (Groen).

Claims 37, 39 and 41 are rejected under 35 U.S.C. §103(a) as being unpatentable over Grabau in view of Groen and further in view of U.S. Patent No. 6,772,709 (Shibata).

Claims 37, 39 and 41 are rejected under 35 U.S.C. §103(a) as being unpatentable over Isen in view of Shibata.

Claims 42-43 are rejected under 35 U.S.C. §103(a) as being unpatentable over Grabau in view of Groen and further in view of U.S. Patent No. 6,050,189 (Junghans).

Claims 42-43 are rejected under 35 U.S.C. §103(a) as being unpatentable over Isen and further in view of Junghans.

Claims 66-79 are rejected under 35 U.S.C. §103(a) as being unpatentable over Grabau in view of Groen and further in view of U.S. Patent No. 6,246,327 (Eberhardt).

Claims 66-79 are rejected under 35 U.S.C. §103(a) as being unpatentable over Isen in view of Eberhardt.

Independent claim 33

Independent claim 33 recites "precoating, prevarnishing, or preprinting the printable substrate with varnish or a pre-inking medium that reduces absorbent properties of the printable substrate to prevent or reduce absorption of the conductive paste or conductive ink by the substrate".

As described in more detail below, Isen fails to disclose the above limitations because Isen discloses (1) a dielectric layer between a conductive layer and an Aluminum substrate to prevent electrical contact with the Aluminum substrate and (2) a conductive layer directly in contact with a non-conductive substrate 53.

Isen discloses a press for printing an electrical circuit directly onto a substrate. An embodiment of Isen's press is depicted in Fig. 5. According to that embodiment, a dielectric coating 58 is deposited on the Aluminum substrate 52 and conductive liquids are applied after the dielectric coating 58 (see col. 8, lines 1-46). The express purpose of the dielectric layer 58 is to prevent electrical contact with the Aluminum sheet (see col. 8, lines 7-9 of Isen). In a further embodiment depicted in Fig. 8, Isen discloses that no dielectric layer, or any other layer, is required if the substrate is non-conductive, i.e., a polymeric plastic substrate 53. In that embodiment, a conductive layer, i.e., capacitor plate 802, is printed directly onto the non-conductive substrate 53 (see col. 11, lines 60-65; and fig. 8 of Isen).

In the response to our previous arguments, the Examiner points out that col. 10, line 61 - col. 11, line 6 of Isen lists various possible substrates including absorptive substrate. That is true. But, Isen does not teach or suggest that a layer is required between all of these different substrates and the conductive layer. Rather, Isen teaches that the dielectric layer 58 is required only when the substrate is conductive to prevent electrical contact with the substrate.

Therefore, since Isen discloses only the use of a dielectric layer 58 on an Aluminum substrate 52 for the express purpose of preventing electrical contact with the Aluminum substrate and further discloses that a conductive layer may be printed directly onto a non-conductive substrate with no layer of any kind therebetween, Isen fails to disclose, teach or suggest "precoating, prevarnishing, or preprinting the printable substrate with varnish or a pre-inking medium that reduces absorbent properties of the printable substrate to prevent or reduce absorption of the conductive paste or conductive ink by the substrate", as expressly recited in independent claim 33.

Regarding the rejection of independent claim 33 in view of Grabau and Gron, the Examiner acknowledges that Grabau fails to disclose "precoating, prevarnishing, or preprinting the printable substrate with varnish or a pre-inking medium that reduces absorbent properties of the printable substrate to prevent or reduce absorption of the conductive paste or conductive ink by the substrate" and cites Gron col. 3, lines 50-66, as teaching this feature.

As stated in MPEP §2143, to reject a claim based on a combination of references, Office personnel must articulate the following requirements:

> (1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference;
> (2) a finding that one of ordinary skill in the art could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately;
> (3) a finding that one of ordinary skill in the art would have recognized that the results of the combination were predictable; and

(4) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness.

The rejection in view of Grabau and Gron fails meet the prongs 1-3 because Gron discloses a coating process that (1) is part of a manufacturing process, (2) is performed to attain a physically and visually uniform coated paper surface and not to prevent absorption of a conductive ink or paste, and (3) considerably increases the length of the manufacturing line, and thus would not be incorporated into a printing process.

Regarding the first requirement, the combination fails to teach or suggest anything about the absorption of a conductive ink or paste. Gron relates to a method for manufacturing a paper or board web. The Examiner-cited portion of Gron disclose that machines for manufacturing paper or board include coating stations. Gron discloses that paper can be very porous and that a paper web can be precoated before surface coating proper, wherein the aim of the double coating is to attain a physically and visually uniform coated paper surface for a printing base (see col. 3, lines 50-53 and 58-61). The precoating of Gron prevents the subsequently applied coating layer from being absorbed into the substrate (see col. 3, lines 61-66 of Gron). Gron further discloses that the web must be dried after the precoating process to properly add the coating layer and that this increases the length of the manufacturing line (see col. 3, lines 53-58).

Accordingly, Gron teaches only that the precoating reduces absorption of a coating proper into the substrate for the purpose of achieving a uniform coating layer for producing a fine paper product. Regarding the first prong of the above requirements for a rejection based on a combination of references, Gron does not teach or suggest that the absorption of a conductive ink or paste is reduced or prevented by the coating. Rather, only the absorption of the coating for

producing a fine paper is prevented. Thus, it is possible that the precoating would have not effect on conductive ink or paste.

Regarding the second prong of the requirements for a rejection based on a combination of references, Gron discloses that the coating process is part of the manufacturing process and there is no teaching that it could be incorporated into part of the printing process.

Regarding the third prong of the requirements for a rejection based on a combination of references, it is not predictable that the coating process of Gron could be performed as part of a printing process. As mentioned above, the precoating and coating process of Gron adds considerable length to the paper manufacturing line. That increase would be is a big disadvantage to the printing process. Thus, it is not predictable that the coating process disclosed by Gron could be incorporated into a printing process.

For all the above reasons, independent claim 33 is allowable over Grabau in view of Gron.

Independent claim 44 was previously amended to include similar limitations and should be allowable for the same reasons as is independent claim 33.

The dependent claims 35-43, 45-50, 52-59, and 61-81 are allowable for the same reasons as are independent claims 33 and 44, as well as for the additional recitations contained therein.

Shibata, Junghans and Eberhardt are not added to show the above limitations, but rather to show additional limitations recited in the dependent claims. Even if they were to show the additional limitations they are purported to show, the additional limitations do not cure the deficiencies discussed above. Accordingly, the pending claims are allowable over the combination of Isen, Grabbau, Groen, Shibata, Junghans, and Eberhardt.

The application is now deemed to be in condition for allowance and notice to that effect is solicited.

Should the Examiner have any comments, questions, suggestions, or objections, the Examiner is respectfully requested to telephone the undersigned in order to resolve any outstanding issues.

It is believed that no fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
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